Food and Agriculture Organization of the United Nations

Climate change for forest policy-makers

An approach for integrating climate change into national forest policy in support of sustainable forest management

Version 2.0

FAO FORESTRY PAPER

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ISSN 0258-6150

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2018

Required citation:
FAO. 2018. *Climate change for forest policy-makers – An approach for integrating climate change into national forest policy in support of sustainable forest management – Version 2.0*. FAO Forestry Paper no.181. Rome, 68 pp. Licence: CC BY-NC-SA 3.0 IGO.

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ISBN 978-92-5-131094-6

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Cover photo: Nigerien Forestry Officer gathering information from the local community about their needs in terms of plants to be reintroduced by a planting campaign. ©FAO/Giulio Napolitano

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Burkina Faso
Collecting data from women's groups who depend on NWFPs

Village of Prosadapur, Bangladesh
A group of women attending a Farmers' Field School lesson

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Foreword

As the impacts of climate change and climate variability become increasingly evident in many parts of the world, the critical role of forests in climate change mitigation and adaptation has become widely recognized. By acting as carbon sinks and storing carbon, forests make a significant contribution to climate change mitigation. They also play an essential role in reducing the vulnerabilities of people and ecosystems and enhancing their abilities to adapt to climate change and climate variability.

In many countries, policies related to forests and climate change are the competencies of different sections of government and involve different groups of stakeholders and experts. The exchange of information across administrative and sectoral boundaries on issues pertaining to forestry and climate change is often limited, and the principles of good governance are not always applied in the best possible manner. Climate change issues have not yet been fully addressed in national forest-related policies in many countries. Moreover, the forest sector's potential to support climate change mitigation and adaptation at the national level, and the needs that must be met to realize this potential, have not been thoroughly considered in national climate change strategies. The cross-sectoral dimensions of the impacts of climate change and response measures have also not been fully appreciated.

Efforts within a country to mitigate and adapt to climate change may have major implications on forest policy and sustainable forest management. Using a governance framework can help countries develop and implement comprehensive forest policies that can promote sustainable forest management. Without properly addressing forest governance and integrating climate change issues into their national forest policy, sustainable forest management will likely not be achieved.

This document is published as part of the effort by the Forestry Department of FAO to assist countries in their efforts to address policy issues related to forests and climate change by integrating climate change considerations into national forest-related policies and actions. It follows a specific request by the FAO Committee on Forests to update the 2011 edition of *Climate Change for Forest Policy-Makers*. This publication is intended to help senior officials in government administrations and the representatives of other stakeholders groups, including civil society organizations and the private sector, prepare the forest sector for the challenges and opportunities posed by climate change in the light of new international agreements.

In the 2015 Paris Agreement, negotiated within the United Nations Framework Convention on Climate Change, countries have expressed new commitments to mitigate and adapt to climate change and are articulating these commitments in their Nationally Determined Contributions. Countries are also preparing national adaptation plans through a process adopted in 2010 in the Cancun Adaptation Framework of the United

Nations Framework Convention on Climate Change. This work is being done at the same time as countries have committed themselves to achieving the Sustainable Development Goals, which the UN General Assembly adopted in 2015 as part of the 2030 Agenda for Sustainable Development. In these agreements, forests have been accorded an increasingly prominent place. These developments have opened up new opportunities for individual countries to integrate climate change into national forest policy in support of sustainable forest management.

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Acknowledgements

The Climate Change for Forest Policy Makers provides a practical approach to the process of integrating climate change into forest policies and national forest programmes. The aim is to assist senior officials in government administrations and the representatives of other stakeholders, including civil society organizations and the private sector, to prepare the forest sector for the challenges and opportunities posed by climate change.

The first version was published in 2011 and was informed by national workshops and input from numerous experts. This updated edition of Climate Change for Forest Policy-Makers reflects new developments in the international climate change dialogue under the United Nations Framework Convention on Climate Change and the Sustainable Development Agenda as well as related country commitments. Several new tools and references have been added to support countries address emerging policy issues related to forests and climate change.

The updated edition was coordinated by Simmone Rose and Alexia Massacand prepared the first and subsequent drafts. Our sincere thanks go to the colleagues who provided invaluable comments during the initial phase of the revisions and on the successive drafts: from FAO Irina Buttoud, Douglas Muchoney, Ewald Rametsteiner, Mette Wilkie, Daowei Zhang and from the CGIAR Research Program on Forests, Trees and Agroforestry, Vincent Gitz and Alexander Meybeck. The document was edited by Gordon Ramsey and typeset by Kate Ferrucci while Serena Pesenti provided administrative support.

The development of this second edition was initiated under FAO's Strategic Programme 2: Making agriculture, forestry and fisheries more productive and sustainable, through the Major Area of Work on Climate-Smart Agriculture (MAW-CSA).

A view of the tropical forest surrounding the INERA (Institut National d'Études et de Recherches Agronomiques) research station under renovation

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Introduction

Climate change poses serious risks to the environment and to the very survival of the human species. Everyone in the world and every sector of the government and the economy are likely to be affected. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have recognized the need to take urgent action to mitigate and adapt to climate change.

Climate change poses crucial challenges to the forest sector, but it may also create new opportunities. Policy-makers and forest managers will need to consider both the challenges and the opportunities. Their responses to climate change will also need to take into account the many different goods and ecosystem services that forests provide for a wide range of stakeholders.

It is important that forest-related climate change strategies and plans are integrated into countries existing forest policy and other sectoral policies that affect forests. This integration can help to ensure that efforts to reach climate change objectives are combined with efforts to achieve forest sector objectives, and that trade-offs are weighed and synergies captured.

In many countries, the objectives of forest management have become more diverse over time, and pressures on forests from both outside and within the sector have increased. The high global rates of deforestation and forest degradation are a reflection of this increased pressure. Food security, agricultural productivity, the supply and demand of energy, transportation and rural development are all closely linked to the success of sustainable forest management. Coordination and cooperation across all the sectors that shape how land is used is crucial.

This document has been developed to help forest policy-makers integrate climate change into existing national forest policy. It uses 'good governance' as a driving principle and overall framework. It also encourages policy-makers to address forestry issues in a consistent manner in all national climate change strategies, including Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and other related policies and plans.

The document is based on a governance framework that recognizes eight essential elements of forest governance (see Box 1.2). These elements, which include stakeholder participation and cross-sectoral coordination and cooperation, are key factors for the success of a coherent approach to addressing forests and climate change. The actions outlined in the document are intended to contribute to countries' efforts to achieve sustainable forest management.

The document is divided into four sections. Section 1 provides the background, aims and suggested application of a coherent approach for integrating climate change into national forest policy. Section 2, which provides guidance at the strategic level, outlines the

major outcomes that countries may seek to achieve regarding the essential elements of the governance framework. Section 3 offers operational guidance for reaching the outcomes identified in Section 2. Possible actions to be taken under each element of the governance framework are divided into four stages of the policy process: evidence collection and analysis; planning processes; implementation; and monitoring and evaluation. Section 4 presents a list of useful information resources and tools.

Section 1 – Background, aim and approach

Climate change, forests and land use

Climate change and forests

Climate change constitutes a direct threat to forest ecosystems, forest-dependent peoples and society as a whole through reduced delivery of products and forest ecosystem services. Indirect effects, driven by land use, economic and social changes, will also have impacts on forests and their ability to provide products and ecosystems services. Although forest ecosystems are inherently dynamic, the speed of predicted changes is likely to far exceed the natural capacity of many forest species and ecosystems to adapt. In addition, extreme climatic events and climate-related disasters may overwhelm countries' capacities to respond to them rapidly and effectively.

Countries need to anticipate the direct and indirect threats posed by climate change on forests, people and biodiversity, and take actions to reduce their vulnerability, increase their resilience and strengthen their ability to adapt to climate change. Adaption in the forest sector includes making the most of any beneficial opportunities (e.g. longer growing seasons). The potential positive impacts of climate change should be taken into consideration and addressed in policies and management practices related to forest and land use.

Countries have also committed to mitigating climate change by reducing greenhouse gas (GHG) emissions, increasing the rate of GHG removals from the atmosphere (e.g. through afforestation, reforestation, forest restoration and changes to forest management practices), and using sustainably produced forest products as substitutes for emissions-intensive materials.

Forests have considerable potential for climate change mitigation and for carbon sequestration in particular. According to FAO's *Global Forest Resources Assessment 2015*, the world's forests store an estimated 296 Gt of carbon in both above- and below-ground biomass, which contains almost half of the total carbon stored in forests. The highest densities of carbon are found in forests of South America and Western and Central Africa, storing about 120 tonnes of carbon per hectare in the living biomass alone. The global average is 74 tonnes per hectare. Over the past 25 years the carbon stocks in forest biomass have decreased by almost 11.1 Gt, equivalent to a reduction of 442 million tonnes per year or about 1.6 Gt of carbon dioxide. The reduction is mainly driven by carbon stock changes as a result of converting forest lands to agriculture and settlements and degradation of forest land.

The Paris Agreement and Nationally Determined Contributions

In 2015, Parties to the UNFCCC reached a landmark agreement in Paris to combat climate change, adapt to its effects, and accelerate the actions and investments needed for a sustainable low-carbon future. The Paris Agreement recognizes the importance of land use in the removal of GHGs from the atmosphere. Particular emphasis was given to the role of forests in maintaining and enhancing sinks and reservoirs of carbon. This emphasis has put forests at the centre stage in global efforts to address climate change and has opened up new prospects for national forest policy and related actions to achieve sustainable forest management.

The Paris Agreement encourages all countries to articulate their optimal proposals for climate change actions in their Nationally Determined Contributions (NDCs) and make these proposals more ambitious in the years ahead. Actions in this area include the conservation of forests and the promotion of non-extractive livelihoods. In eastern Africa for example, South Sudan has stated its objective to increase areas dedicated to the conservation of natural forests by 20 percent over the next 10 to 15 years (FAO, 2017).

NDCs typically contain important information, such as benchmarks of past emissions, time frames for action and technical details. Countries are required to regularly update their NDCs and provide reports on their emissions and their implementation efforts with regards to both mitigation and adaptation. The impact of these efforts will depend on each country's capacity to undertake policy revisions based on the principles of 'good governance'. It will also depend on the development of capacities to understand contextual factors related to a range of socio-political and technical issues. For details on the Paris Agreement, see Section 4.

Mitigation and adaptation in the context of the Paris Agreement

The Paris Agreement defines mitigation objectives to achieve zero-net emissions in the second half of this century and adaptation objectives to enhance capacity, strengthen resilience and reduce vulnerability to climate change. Importantly, the Paris Agreement encourages the development of approaches that jointly address both mitigation and adaptation for the integrated and sustainable management of forests.

In the forest sector, mitigation approaches will need to include national forest policies that take into consideration other key sectors, such as energy, agriculture, and water, and acknowledge the strong linkages between land use, land-use change and forestry (LULUCF) (Box 1.1). Mitigation activities in the LULUCF sector can decrease emissions and increase removals of GHGs through carbon stock accumulation. However, this accumulation of carbon stock is reversible and non-permanent.

The accumulation of carbon stock is mainly performed by forests and sustainable cropping and grazing systems, which store carbon in the soil and vegetation. Sustainable soil and land management initiatives that build up soil organic matter are good examples of climate-smart interventions that can deliver co-benefits at all levels. These initiatives contribute to climate change mitigation and at the same time maintain soil-supported ecosystem services, which increases the resilience of agricultural and forest ecosystems to climate change and other stressors.

BOX 1.1
Forests in the land-use sector

Situating forests in a landscape context and making linkages with other sectors (e.g. agriculture, energy) is important for the development of sustainable climate change mitigation and adaptation actions that are in line with the country's goals for poverty reduction, food security and national development. Forests and agriculture systems have close biophysical and socio-economic relationships in most landscapes and in many farming systems.

By protecting watersheds, forests contribute to the conservation of the soil and water that support agricultural systems, which includes crop and livestock production, forestry, and fisheries and aquaculture. They also contribute to the delivery of clean and reliable drinking water supplies for populations downstream. In aquaculture, climate change may intensify the competition for land, water, energy and feed resources and rising sea levels may create new environments and new opportunities for forests. For example, climate change responses in marine aquaculture could support the expansion of mangrove forests.

Many farm families rely on forests and trees for ecosystem services (e.g. wind protection, shade) or products for domestic use or sale in markets. Agricultural development may increase pressure on forest land, but in some cases this development can also promote forests and trees in the landscape. Context-specific, climate-smart solutions based on sound evidence will be required to guide the agricultural and forest sectors toward a sustainable future.

Similarly, there are strong links between the forest and energy sector. Forestry has always been a traditional source of biomass for generating energy. Demand for forest-based fuels (e.g. woodfuel, palm oil) is increasing in many countries, and is driving changes in forest management. Many of the mitigation options mentioned in Figure 1.1 can either facilitate or hinder the adaptation of local people to climate change, and several of the listed adaptation options can affect ecosystems and their potential to sequester carbon. Taking into account issues connected to the broader management of the landscape ensures that the synergies and trade-offs associated with different interventions are clear. This makes it possible to enhance carbon uptake and at the same time increase the resilience of forests and people to climate change across the landscape.

Approaches to climate change adaptation involves national planning, and the identification and periodic updating of support needs. To ensure that climate change adaptation is integrated into all the relevant socio-economic and environmental policies and actions, these approaches must be country-driven and participatory, and follow transparent governance principles. Adaptation solutions come in many forms. They will depend on the specific context of a given community, business, organization, country or region. They can range from improving fire control to redesigning government policies and increasing stakeholders' engagement in the international, civil, public and private sectors.

Forest-related measures proposed in national adaptation plans may include: providing forest employment; maintaining access to forest land and resources; and strengthening participatory community-based governance to increase resilience of forest-dependent people. Cross-sectoral adaptation measures may include: climate-smart agriculture; the restoration of degraded lands through reforestation and land restoration; watershed management and on-farm soil and water conservation measures; and the sustainable use of wood fuels.

FIGURE 1.1
Examples of mitigation and adaptation measures in the forest sector

Mitigation options	Adaptation options
Carbon sequestration **through increases in forests, trees, and forest carbon stock enhancement** • Afforestation, reforestation and forest restoration • Increase of tree cover in farming systems (agroforestry), rural landscapes and cities • Enhancement of carbon stocks and sequestration capacity through silvicultural practices → employing silvicultural techniques to increase forest productivity and carbon stocks → increasing carbon content of soil **Forest *carbon stocks conservation* through reduction of deforestation and forest degradation** • Addressing drivers of deforestation • Promotion of sustainable forest and land management → Implementing reduced impact logging • Effective conservation of forested protected areas • Integrated fire management on forested and adjacent non-forest land • Pest and disease control ***Substitution*** **by use of wood products** • Substitution of steel, concrete, aluminium and plastic with sustainably produced and legally harvested wood products • Use of bioenergy based on sustainably produced wood to substitute for fossil fuels	***Reducing vulnerability*** **and strengthening *adaptive capacity* of trees and forests especially in fragile forest ecosystems** • Management of forest biodiversity → choosing more suitable provenances and promoting adaptable species → protecting mature forest stands → protecting functional groups and keystone species → protecting climatic refugia and most highly threatened species outside of their own habitat → avoiding landscape fragmentation and enhancing biodiversity corridors • Maintaining forest health and vitality to reduce vulnerability → pest and disease control • Improving fire suppression and control → integrated fire management on forested and adjacent non-forested land • Adjusting forest management practices → minimizing the risks of forest disturbances from sea level rise and extreme events (e.g. windfall, erosion, landslides, etc.) → species selection, soil preparation, planting, mixing, tending, thinning operations, etc. ***Reducing vulnerability*** **and strengthening *adaptive capacity* of forest-dependent communities** • Reinforcing local coping mechanisms • Strengthening capacities of community-based organizations for improved governance • Diversifying forest-related products and employment opportunities

Given the reliance of the rural population on forest resources and ecosystem services in many countries, forest-based adaptation is becoming a priority. It has been widely recognized that it is important to adjust forest management practices to maintain and enhance the full range of the forest's productive capacity so that it can deliver a wide range of social, environmental and economic benefits. The importance of maintaining the health and vitality of forests so that they can withstand disturbances and reduce the incidence and impact of pests and diseases has also been acknowledged. Protecting, conserving and restoring other important terrestrial and freshwater ecosystems and their biodiversity, including wetlands, mangroves, rangelands and grasslands is also considered a crucial element of climate change adaptation.

Joint mitigation and adaptation approaches include policies that contribute to the long-term sustainability of climate change actions, such as reducing emissions from deforestation and forest degradation, and conserving and enhancing forest carbon stocks. Figure 1.1 lists some forest-related mitigation and adaptation options. It indicates that many actions in the forest sector can contribute simultaneously to climate change adaptation and mitigation, and highlights the substantial opportunity to achieve synergies. Synergistic actions may in turn create positive feedback in other critical areas, such as disaster risk reduction, preparedness, and response. These actions can provide vital support to the most vulnerable populations in a country by enhancing their resilience and coping capacities in the event of extreme weather events or disasters.

Sustainable Development Goals (SDGs)

In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, which consists of 17 strategic goals to end poverty, protect the planet, ensure prosperity, and foster peace and justice. The Sustainable Development Goals (SDGs) call for actions to be undertaken by all countries, regardless of income. They recognize that ending poverty must go hand-in-hand with addressing economic growth and social needs, combatting climate change and protecting the environment. The SDGs, which are problem-oriented and not sector-specific, call for collective and integrated action.

Forests and trees contribute to all 17 SDGs, the Aichi targets of the Convention on Biological Diversity (CBD), and the Paris Agreement. Pursuing these goals in a coherent way that allows for collective action requires a governance framework that includes a number of elements, such as stakeholder participation, transparency of decision-making, accountability of actors and the rule of law. The SDGs are not legally binding, but governments are expected to establish national frameworks for their achievement. Countries have the primary responsibility for monitoring the progress being made toward reaching the SDGs. The effective monitoring of progress requires the timely collection of quality data and making this data accessible.

The achievement of SDGs 13 (climate action) and 15 (life on land) and related targets are particularly relevant to the contribution of forests and trees and their role in the implementation of the Paris Agreement. SDG 13, specifically addresses the urgent action that must be undertaken to combat climate change and its impacts. It articulates a number of targets, including: strengthen resilience and adaptive capacity to climate-related hazards

and natural disasters in all countries; integrate climate change measures into national policies, strategies and planning; and mobilize USD 100 billion annually by 2020 to address developing countries' needs and fully operationalize the Green Climate Fund (GCF).

SDG 15 urges countries to sustainably manage forests, combat desertification, halt and reverse land degradation, and stop the erosion of biodiversity. Key related targets include: ensure the conservation, restoration and sustainable use of forest ecosystems and their services by 2020; promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally; and mobilize significant resources to finance sustainable forest management and provide adequate incentives to developing countries to advance conservation and reforestation.

Climate finance

Significant financial resources are needed to reduce GHG emissions and adapt to the impacts of climate change. Climate finance is clearly required if the joint pursuit of the Paris Agreement objectives and SDGs is to be successful. Climate finance includes local, national or transnational financing, which is drawn from public, private and alternative sources.

The Paris Agreement reaffirms the obligations of developed countries to financially support the efforts of developing countries to chart a pathway to a clean, climate-resilient future. It also marks the first time that Parties to the UNFCCC have encouraged voluntary contributions from other non-developed country Parties. Every two years, developed countries Parties should submit indicative information on future actions, which includes projected levels of public finance to be provided to developing country Parties. They should also strive to achieve a balance between adaptation and mitigation.

Financial support relies on the financial mechanism of the UNFCCC, partly entrusted to the Global Environment Facility (GEF) and the four special funds: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), both managed by the GEF, the GCF, and the Adaptation Fund (AF). These mechanisms, if they are used in a favourable governance context, can support countries' efforts to conserve, sustainably manage and enhance their forest resources, and achieve sustainable forest management more broadly (see Section 4). Many developing countries, however, face challenges in developing the capacity needed to access the financial support earmarked for climate change mitigation and adaptation.

REDD+

The Paris Agreement sends a strong, unprecedented message that REDD+[1] is a critical and prominent piece of the new global climate efforts to achieve net-zero emissions in the second half of the century. Engaging in REDD+ activities has direct implications

[1] REDD+ refers to reducing emissions from deforestation and forest degradation in developing countries and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

on national forest and land management and may require revisions in forest-related policies in participating countries.

REDD+ is a mechanism developed by Parties to the UNFCCC that creates a financial value for the carbon stored in forests and offers incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. Its scope is defined by five activities: reducing emissions from deforestation; reducing emissions from forest degradation in developing countries; the conservation of forest carbon stocks; the sustainable management of forests; and the enhancement of forest carbon stocks[2].

The Warsaw Framework[3], which serves as a guide to these REDD+ activities, recommends that countries adopt a phased approach, progressing from strategy development and implementation, to results-based actions that can be measured, reported and verified. Countries should develop strategies and action plans; a national forest emissions level or forest reference level (or subnational levels if appropriate); a national forest monitoring system for the monitoring, reporting, and verification (MRV); and a system for providing information on how social and environmental safeguards are being addressed. MRV systems are increasingly taking advantage of the greater availability of data and technology, both nationally and internationally. This data enables countries to measure progress more objectively and to identify strategic, science-based forest conservation targets.

Leading up to the Paris Agreement, REDD+ activities had already attracted large international investments, mainly from government sources. These investments provide a solid base to jump start actions to achieve the forest-related climate goals that countries have put forth in their NDCs. Also, as a direct consequence of the Paris Agreement, new, long-term investments should emerge from developed countries and the private sector.

Sustainable forest management and the governance framework

In recent decades, there have been significant changes in societal demands for forest goods and services, and the approaches used to formulate national forest policies and manage forests. Management objectives now generally encompass a broad scope of forest goods and ecosystem services. Pressures on forests from other land uses have also increased. Governance has emerged as a key element for using forest resources efficiently, sustainably and equitably, and achieving forest-related development goals. The formulation of forest policy has evolved toward a process that necessarily involves a range of stakeholders.

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[2] It should be noted that the use of the term, 'sustainable management of forests' (SMF) in the list of eligible REDD+ activities is far narrower than the meaning of the term, 'sustainable forest management', as described by the United Nations General Assembly and referred to later in this document. Given the scope of the other four REDD+ activities, the inferred meaning is management of forests, in particular those producing timber, in such a way that carbon stocks are maintained at constant levels on average over time. In this context, SMF is thus close to the concept of 'sustained yield forestry'.

[3] For information on the Warsaw Framework for REDD+ go to: http://redd.unfccc.int/fact-sheets/warsaw-framework-for-redd.html

These developments are reflected in the concept of sustainable forest management (SFM) and in the *Framework for Assessing and Monitoring Forest Governance* (hereafter referred to as the Framework), which was developed under the guidance of FAO and the World Bank's Program on Forests (PROFOR).[4] The UN General Assembly, in Resolution A/RES/62/98, described SFM as a dynamic and evolving concept intended to "maintain and enhance the economic, social and environmental value of all types of forests for the benefit of present and future generations". The resolution further endorses the seven "thematic elements" of SFM: (i) extent of forest resources; (ii) forest biological diversity; (iii) forest health and vitality; (iv) productive functions of forest resources; (v) protective functions of forest resources; (vi) socio-economic functions of forests; and (vii) legal, policy and institutional framework.

SFM directly contributes to sustainable land management (SLM), the reduction of soil erosion and biomass, and the prevention and reversal of land degradation. Together SFM and SLM offer an approach to the management of forests, rangelands, and areas with agricultural potential, that provides rural populations with sustainable grazing, forestry products and agriculturally productive land and increases their resilience to climate change.

In this context, the framework provides a comprehensive forest policy framework for efforts to achieve SFM and SLM at the country level. The framework builds on core parameters for governance monitoring, such as those developed for REDD+.

The Framework recognizes that governance constitutes both the context for interactions among a range of actors and stakeholders with diverse interests, as well as the result of these interactions. The foundation of the framework consists of generally accepted pillars and principles of 'good' forest governance (see Figure 1.2).

'Good governance', which is generally characterized by the application of these principles to the different pillars, is manifested by stakeholder participation, the transparency of decision-making, the accountability of actors and decision-makers, and the rule of law and predictability. It is also associated with efficient and effective management of natural, human and financial resources, and the fair and equitable allocation of resources and benefits.

Forest policy is an essential component of SFM and a key element of the framework. As a formal government agreement negotiated with relevant stakeholders, a forest policy represents a shared vision for guiding future decisions and actions, and the development of strategies for responding to emerging issues. The development of a forest policy requires, among other things, strong political support, stakeholders' engagement, cross-coordination with other national policies, and the planning of a course of action for implementation. Forest policies are also increasingly recognizing the tenure rights of people living in and around forests, and the importance of managing the pressures on forest land for agricultural development, biofuel production, carbon sequestration and conservation.

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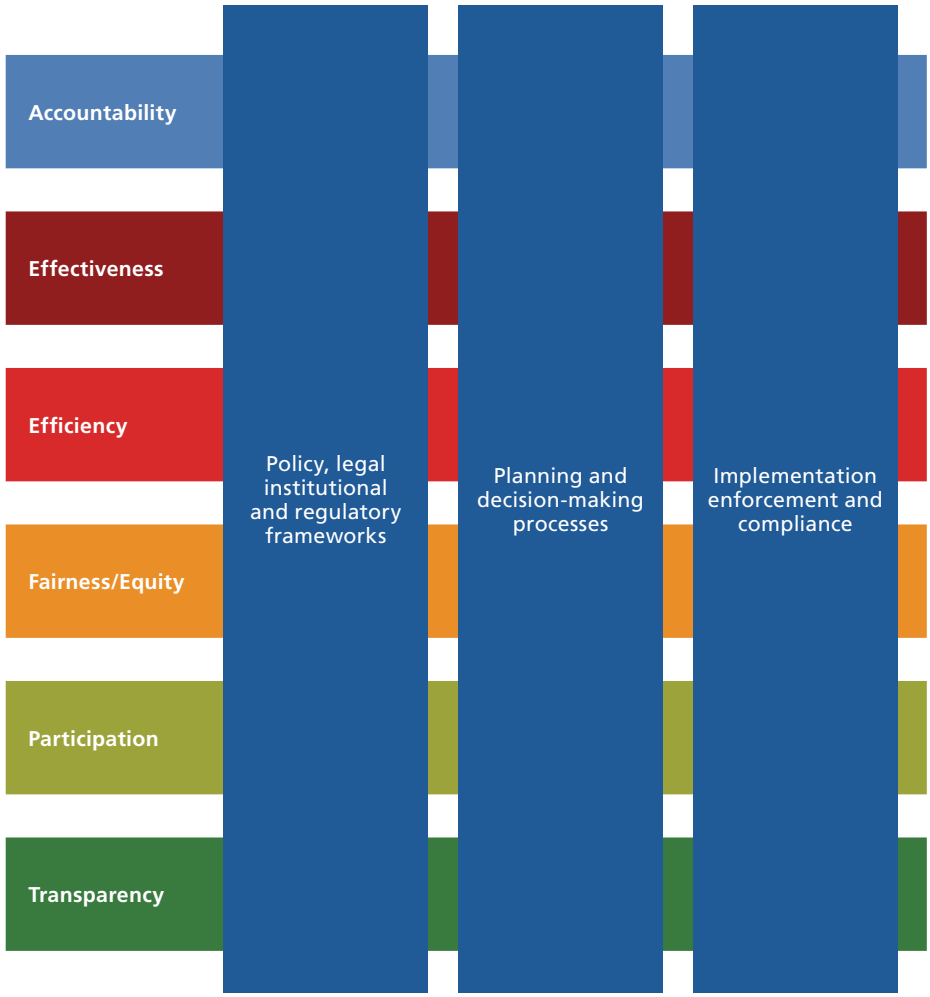
[4] The *Framework for Assessing and Monitoring Forest Governance* is accessible at: http://www.fao.org/climatechange/27526-0cc61ecc084048c7a9425f64942df70a8.pdf .

FIGURE 1.2
Pillars and principles of governance



By integrating climate change mitigation and adaptation goals into a forest policy, forest management objectives can be balanced with climate change objectives, and synergies can be captured with other forest-related processes, such as forest law enforcement, governance and trade. This integration entails making changes to forest-relevant policies and then revising related legislation; making changes to the relevant organizations; and adjusting coordination and participation mechanisms. At the same time, this process of integration must ensure coherence, consistency and coordination with national climate change policies and NDCs.

When integrating climate change into forest policies, countries are encouraged to take into account the eight elements of the framework (Box 1.2).

BOX 1.2

Description of the eight elements of the forest governance framework

Forest-related policies and laws: the body of national and subnational policies on forests and their use that define: the goals, the ways by which these goals are to be achieved, the distribution of responsibilities, and the relationship with related policies on climate change; how policies should be defined and implemented based on good governance principles; and statutory and customary laws, which includes rules and regulations defining rights and obligations, that help to effect policies.

Concordance of broader development policies with forest policies: the consistency and coordination of national development plans and strategies with forest policies; and the consistency and coordination of other sectoral (e.g. land use, mining, agriculture, transport, energy) policies, laws and regulations with forest policies, laws and regulations.

Institutional frameworks: the organizations in place to develop, decide upon and implement forest-related rules, policies, strategies and legislation. These comprise public and private bodies at the national and subnational levels. They include: a range of administrative bodies dealing with forest matters; community-based organizations, associations and other non-governmental organizations; and research, training, and extension bodies.

Financial incentives, economic instruments and benefit sharing: public (e.g. national budgets, loans, compensation, grants, taxation, multilateral and bilateral contributions) and private mechanisms used to finance the forest sector; mechanisms to attract, manage and distribute financial resources; and mechanisms to monitor the distribution of benefits and impacts.

Stakeholder participation: the extent, characteristics and quality of participation of a range of stakeholders in forest policy, and the capacity of different stakeholder groups to engage in policy processes; mechanisms for stakeholder consultation and participation in planning, implementation and monitoring; and mechanisms to deal with conflict management and resolution.

Information, communication and research: forest inventories and forest information systems; information and the generation, exchange and dissemination of data on forests and climate change (e.g. climate change impact and vulnerability assessments); research on the biophysical, social, and policy aspects of forests and climate change; traditional knowledge; systems for reporting data and information to UNFCCC and other international bodies; and communications and outreach to stakeholder groups and the public.

Stakeholder capacity and action: the skills, knowledge and expertise that enable countries to respond effectively to the challenges posed by climate change to the forest

Box continues on next page

Box continued

sector; and the capacities of stakeholders to carry out tasks related to process planning, leading, managing and participation. These capacities need to be considered at the individual level and at the organizational level, which includes public, private and civil society organizations.

Cooperation and coordination: cooperation and coordination across implementing and enforcement agencies at the national and subnational levels; and mechanisms for monitoring and implementing relevant international commitments, including cross-border cooperation in the management of common forest resources and other international activities related to climate change.

Aim and objectives of the approach

The aim of this document is to help policy-makers integrate climate change into their national forest policy in a participatory manner in order to support forest-related responses to climate change and achieve coherence with policies in other sectors and NDCs.

The objectives are:

- to assist forest policy-makers in identifying and prioritizing the needed changes in policy or practice so that they are better able to respond effectively to climate change;
- to provide an operational governance-based approach for integrating climate change consistently into a comprehensive forest policy framework;
- to clarify forest and forest-related land use issues that should be considered in climate change policies at the national level; and
- to strengthen cross-sectoral coordination on climate change between forestry and other relevant land-use sectors.

Use of the approach

The approach adopted by this document is based on a governance framework that recognizes the essential elements of forest governance, such as stakeholder participation and cross-sectoral coordination and cooperation, as key success factors for coherent actions on forests and climate change. It can be used in different ways depending on the country's particular needs and the stage that has been reached in the development of its climate change strategies and NDC (see Figure 1.3).

Countries that have not yet identified priority actions in the forest sector for climate change mitigation and adaptation may use the approach outlined in this document to develop a national forest and climate change strategy that will feed into their NDC. Countries that already have a forest and climate change strategy or a REDD+ strategy may use the approach to identify and make needed adjustments to their national forest-related policies to facilitate the implementation of the strategy. All countries may use the approach identified in this document as a way to verify whether existing strategies in the relevant sectors are comprehensive and adequately take into consideration stakeholder interests and priorities. The approach can also be used at subnational levels for similar purposes.

FIGURE 1.3
Possible uses of the approach

Aim	Possible use of the document	Indicative duration
Awareness raising amongst stakeholders	• Stimulation of multi-stakeholder discussion of forest and climate change issues and priority actions in a workshop setting.	2-3 days
Initial analysis of status quo	• Checklist for in-depth identification of status, gaps and priorities taking into account current stage of development of climate change strategies and related nationally-determined contributions.	Several months
Planning of revision of policies and strategies	• Guidance for planning and conducting revision of forest policy to integrate climate change related priorities and subsequent revision of legislation. • Guidance for embedding REDD+ strategy in wider forest and land-use policy. • Guidance for revisions of institutional frameworks as well as other related governance elements such as stakeholder participation and cross-sectoral coordination and cooperation.	Several months
Implementation of revised policies and strategies	• Referral document during implementation of revised policy, legislation and amended institutional framework to help keep actions taken on the eight elements of the forest governance framework aligned and in sync with one another.	Several years
Monitoring and review	• Guidance for development of monitoring and review indicators. • Checklist for identification of process. • Guidance for in-depth implementation review.	Several weeks to years

Kenya –
Local women participating in an FAO project "Support for Responsible Land and Natural Resource Governance in Communal Lands"

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A village forestry committee deliberating on the annual planning calendar of forestry development activities in the village

© FAO/E. PAYUAN

Section 2 – Strategic level outcomes to be achieved

This section summarizes the desired outcomes to be achieved at a strategic level for the eight elements of the framework. The achievement of these outcomes can be facilitated by actions outlined in Section 3.

A Element A – Forest-related policies and laws

To make progress toward achieving their climate change mitigation and adaptation goals, countries may need to review and revise, on the basis of good governance principles, their forest-related policies and the way these policies are implemented. Given that adaptation and mitigation actions will require a legal basis for related rights and obligations, forest laws and related regulations are likely to need to be reviewed and adjusted to ensure their consistency with the forest policies.

Desired outcomes

- Policy development and revisions related to forests and climate change are made at the national and subnational levels in ways that are consistent with NDCs, and further amendments are made as new needs arise.
- Forest-related legislation effectively enables and supports the implementation of climate change policies and actions that are relevant to forests, and is consistent with the revisions that have been made in policies and legislation in the forest sector and other related sectors, particularly with regard to tenure and land use.
- For developing countries engaged in REDD+, legislation is in place to enable REDD+ implementation and secure the equitable and well-defined distribution of respective rights (e.g. carbon rights), responsibilities and benefits.

B Element B – Concordance of broader development policies with forest policies

The revisions that are needed to respond to climate change will have to consider synergies and trade-offs with other objectives of the forest and climate change sectors. In national development policies, for example, this will involve considering land-use

plans and policies related to key sectors, such as agriculture, mining, transport and energy. Revisions will also need to ensure consistency with international commitments and obligations.

Desired outcomes

- National policies that are relevant to forests support the implementation of climate change strategies, and are consistent with other objectives of forest management and other forest-related international commitments and obligations.
- Cross-sectoral consistency is maintained between policies and strategies on climate change in the forest and land-use sector and other key sectors.

Element C – Institutional frameworks

Responding to climate change is likely to entail a range of new initiatives and tasks, and the engagement with new actors and bodies who are working on climate change activities related to forests and land use. Therefore, there will likely be a need to modify existing organizational structures, establish new bodies and revise roles, responsibilities and work modalities.

Desired outcomes

- Organizational structures effectively support the development, implementation and monitoring of forest and climate change strategies and policies.
- For national and subnational agencies, mandates related to forests and climate change are clear and mutually supportive.
- Budgets of relevant national and subnational agencies and organizational resources are adequate, predictable and stable.

Element D – Financial incentives, economic instruments and benefit sharing

Additional financial resources will be required to support the needed forest and climate change actions. Some of this funding can come from national sources, such as earmarked allocations from public budgets, credit programmes by development banks, and revenues from taxation. Additional financial resources are available from international funds that have been created to support climate change mitigation and adaptation in developing countries. Countries could consider setting up financial incentive systems to support climate change response measures in the forest sector, and develop or improve existing systems at the national level to access new funds, manage their distribution and monitor their impact.

Desired outcomes

- Multiple sources of national and international finance for forest adaptation and mitigation measures are identified and used.
- Additional or reallocated financial resources are made available and distributed in an equitable and transparent manner to support climate change activities related to forests and land use.
- Actions are taken to encourage the alignment of incentives with forest-related climate change objectives.

E Element E – Stakeholder participation

To jointly address the needs associated with forests and climate change, new or revised participation mechanisms in planning and decision-making are likely to be required. In particular, the extent to which the government engages with, creates space for, and supports the participation of stakeholders in forest-related processes and decision-making may have to be enhanced. Conflict management mechanisms will also have to be in place to adequately deal with new conflicts that arise due to climate change and the policies that address it.

Desired outcomes

- Mechanisms are in place to provide opportunities for, and ensure, public participation in policies and decisions related to forests and climate change, including the participation of women, civil society, indigenous people and forest-dependent communities.
- Conflict management mechanisms are in place to support stakeholder mediation and other services for managing and resolving conflicts related to forests and climate change.

F Element F – Information, communication and research

New data and information will be needed to carry out climate change impact and vulnerability assessments for forests. Forest-related adaptation and mitigation strategies need to be identified, developed and implemented based on traditional and scientific knowledge. The impacts of climate change and response measures need to be monitored, and international reporting commitments must be fulfilled. It will be essential to raise awareness of forest and climate change issues within the broader context of land use, and disseminate information to a wide range of stakeholders at all levels, national to local. All of these emerging needs will require adjustments to forest-related information, communication and research systems and strategies.

Desired outcomes

- Accurate, timely, relevant and consistent information on forests and climate change issues, impacts and response measures are available and communicated to decision-makers and other stakeholders at all levels. International reporting commitments are met.
- Forest research provides timely and accurate information and knowledge on climate change impacts and vulnerabilities and compiles traditional knowledge and generates new knowledge to help guide adaptation and mitigation measures. This is done through coordinated efforts at the national, regional and international levels.

G Element G – Stakeholder capacity and action

New knowledge, skills and expertise will be needed to enable timely and well-informed decision-making. Stakeholders must have sufficient capacity to plan, lead, manage and participate in relevant processes. Building capacities at individual and organizational levels will require modifications in skills-building programmes and the creation of new programmes.

Desired outcomes

- Sufficient knowledge and expertise are available to: conduct climate change impact and vulnerability assessments for forests; design and implement climate change policies and programmes in sectors related to forests and land use; carry out monitoring and reporting on forests and climate change; and undertake relevant research.
- Individuals and organizations from civil society, indigenous peoples, and small and medium enterprises have sufficient capacity to plan, participate in and manage the processes required to support climate change actions in forestry.
- Capacity development systems, including education and training programmes, are in place and available to stakeholders at all levels. The systems and programmes are reviewed regularly and adjusted as needed in order to maintain the required level of expertise to effectively address the challenges climate change poses to forests and land use.

H Element H – Cooperation and coordination

Responding to climate change is likely to require a new level of cooperation and coordination between national and subnational governments on forest-related activities, and within and among national agencies with mandates related to climate change and forests. Mechanisms supporting the implementation and monitoring of relevant international commitments will need to be strengthened, including cross-border cooperation in the management of common forest resources and other international activities related to climate change.

Desired outcomes

- Cooperation and coordination on forest-related climate change policies and actions are adequate and effective, and are extended to key sectors, such as land, mining, agriculture, and energy.
- Mechanisms are in place to support the implementation and monitoring of relevant international commitments, including cross-border cooperation in the management of common forest resources and other international activities related to climate change.

Leshoz Saba, Russia – Seedlings at the Forest Breeding and Seed Centre

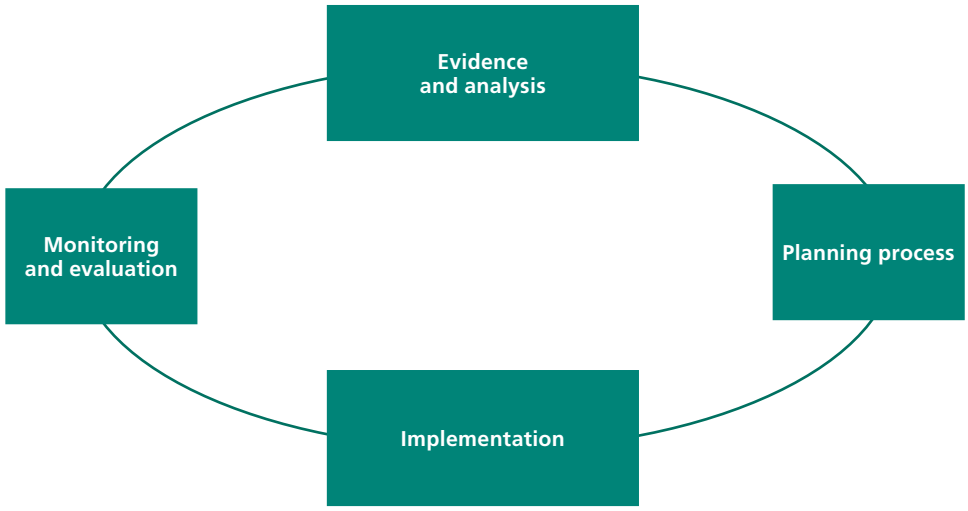
©FAO/VASILY MAKSIMOV

Section 3 – Operational Actions

This section presents suggested actions for achieving the outcomes in the eight elements of the framework. The actions are applicable across a wide range of national circumstances. However, for some countries, certain actions may not be relevant. These countries may choose to adjust some actions to make them more consistent with the national situation. Each country will have to decide how best to carry out the relevant actions and take into consideration its own particular needs.

In practice, integrating climate change into national forest policy involves a range of different and often parallel processes, and the different stages of the processes are often not clearly distinguishable. Nonetheless, it can be useful to conceptualize the process as separate stages in a continuous, iterative cycle. Activities that, in practice, often occur in parallel (or not at all) are thereby simplified and divided into four sequential stages of a cycle (Figure 3.1 and Box 3.1).

FIGURE 3.1
The four-stage policy process



BOX 3.1

Description of the four stages of a policy process model

Evidence and analysis: the policy challenges and issues are identified and related evidence is collected and analysed.

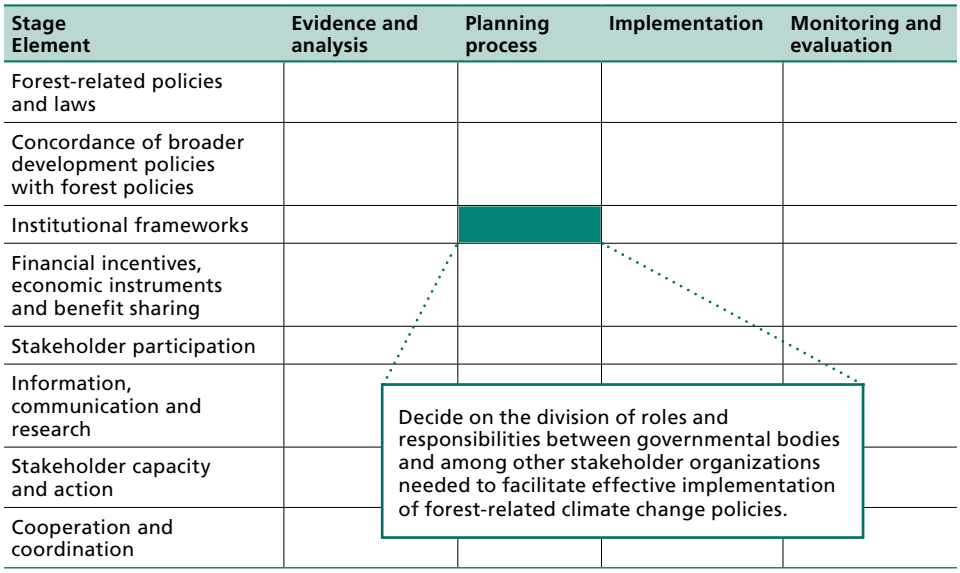
Planning process: together with key stakeholders, priority issues are identified, discussed, and response proposals are developed, negotiated and decided. Agreed strategic directions are legitimized by government (e.g. by a formal announcement of a policy, amendment of legislation) and by other stakeholders.

Implementation: policies, strategies and agreed actions are implemented through the administration, executive agencies, and other public and private stakeholders at national and sub-national levels.

Monitoring and evaluation: data are collected on the implementation of planned actions, and the results are evaluated. This allows the identification of deviations from objectives and planned actions – and corrections, if warranted. Evaluation of performance (whether goals were appropriate and reasonable, and whether action has been cost-effective) is usually done periodically or as the need arises, using monitoring data as an information source.

FIGURE 3.2

Organization of operational actions included in Section 3


Stage
Element
Evidence and analysis
Planning process
Implementation
Monitoring and evaluation
Forest-related policies and laws
Concordance of broader development policies with forest policies
Institutional frameworks
Financial incentives, economic instruments and benefit sharing
Stakeholder participation
Information, communication and research
Stakeholder capacity and action
Cooperation and coordination
Decide on the division of roles and responsibilities between governmental bodies and among other stakeholder organizations needed to facilitate effective implementation of forest-related climate change policies.

The major strength of this simplified four-stage model is that it reduces the complexity of policy-making to manageable, analytical units, which facilitates understanding. It also emphasizes that the integration of climate change into forest policy is an iterative process. New developments, experiences and lessons learned need to be reflected in revisions of policies and implementation arrangements. Understanding the process as a cycle also encourages a continuous and constructive dialogue among the many stakeholders involved in the different stages and at different levels. It is important to recognize that processes related to forests and climate change are – and need to be – well embedded in the overall national governance system.

The remainder of Section 3 lists possible actions to be taken to integrate climate change considerations into national forest policy. The actions are organized by the four stages of the policy process model and the eight elements of the framework. The approach laid out by this document should allow users to systematically and comprehensively analyse the country's status with regard to the eight elements of the framework, and the stage in which a country considers itself to be.

Evidence and analysis

Prior to undertaking actions outlined in this section, it is important to have information and understanding on the following subjects:

- national and subnational climate change impact, risk and vulnerability assessments and findings related to forests and land use;
- national adaptation and mitigation options for the forest sector and their effects;
- climate change strategies, including the NDC, the national climate change strategy, NAP, REDD+ strategy, and other relevant sectoral climate change strategies (e.g. agriculture, energy);
- existing national institutional structure for coordination and action on climate change; and
- key stakeholders and interests related to forest and climate change, including relevant stakeholders from outside the forest sector.

Collecting this information, becoming familiar with it, and making regular reference to it will be needed in order to put the following actions into an appropriate context and ensure their continued relevance.

Forest-related policies and laws

1. Analyse climate change strategies and policies and their potential implications for the forest sector.
2. Identify existing forest and climate change policies and strategies (e.g. REDD+ strategy, forest adaptation strategy) and analyse their coherence with other climate change strategies (e.g. the national climate change strategy and NDC).
3. Analyse the possible climate change mitigation and adaptation actions relevant for the forest sector, using research results and other sources of information.
4. Identify gaps, inconsistencies and areas for harmonization in the legal framework for the forest sector to enable the implementation of policies and actions related to climate change.

5. Identify the places in existing legislation, where the distribution of rights, responsibilities and benefits related to climate change mitigation (including REDD+ and forest carbon rights) and adaptation in the forest sector need to be defined, clarified or amended.

Concordance of broader development policies with forest policies

6. Identify conflicts and synergies with other sector policies (e.g. agriculture, energy, mining, rural development, transport, poverty reduction) with regard to climate change strategies or actions in the forest sector.
7. Identify the inconsistencies between forest legislation and legislation in other sectors, including international obligations that hinder the achievement of forest sector goals for climate change adaptation and mitigation.

Institutional frameworks

8. Identify new and emerging roles in the country that influence the development and implementation of forest-related climate change policies and NDCs and the fulfillment of related international commitments.

Financial incentives, economic instruments and benefit sharing

9. Assess the need for additional financial resources to enable the effective integration of climate change considerations into national forest policy and implement related actions.
10. Identify new sources of public, private and national financing, as well as international financing options, such as the Adaptation Fund, the GCF and the GEF, that can be used to support climate change-related actions in the forest sector, and determine the suitability of this financing for different stakeholders and different types of intervention.
11. Evaluate the effectiveness and efficiency of existing mechanisms for allocating resources transparently and equitably to the appropriate stakeholders or organizational levels for the implementation of policies and actions related to forests and climate change.
12. Identify incentives, both positive and negative, in the forest sector and other sectors that influence the implementation of forest-related climate change policies or actions.

Stakeholder participation

13. Identify the needs that must be met to improve transparency and strengthen stakeholder engagement in the forest and climate change sectors and related land-use sectors.
14. Identify options to address these needs in order to ensure the effective implementation of forest and climate change actions.
15. Identify areas of actual and potential conflict among forest stakeholders that may be caused by climate change and/or climate policies, or may limit the effectiveness

of climate change actions in forestry. Assess the adequacy of existing mechanisms for conflict management.

Information, communication and research

16. Identify new data and information needs related to climate change, forests and land use, and approaches for amending the current forest information systems so that they can meet national and international needs for forest monitoring, measurement, reporting and verification in ways that are in accordance with national circumstances, and address the requirements for monitoring the impacts of climate change.
17. Assess the adequacy of current strategies and means of communication to different stakeholders and bodies at all levels in the forest sector to meet the new requirements resulting from climate change, and identify changes needed.
18. Identify new national research needs that are related to climate change adaptation and mitigation in forests, and assess options for regional and international research collaboration.
19. Identify and document traditional knowledge relevant to climate change mitigation and adaptation in forests and consider ways to expand its use.

Stakeholder capacity and action

20. Analyse the capacity development needs of forest-related bodies, the private sector, local community organizations and indigenous groups with respect to their expertise on climate change and their capacities to plan, participate in and/or manage related processes.

Cooperation and coordination

21. Identify gaps, overlaps and potential synergies in the mandates and functions of governmental and non-governmental organizations at different levels, and identify options to address these gaps.
22. Identify national forest-related commitments under international and regional climate change agreements.
23. Determine the needs that must be met to strengthen cross-sectoral coordination in the forest sector and with related land-use sectors, and identify options to address these needs to ensure effective implementation of forest and climate change actions.

Planning process

Forest-related policies and laws

1. Revise forest policies so that they are consistent with policies, strategies, NDCs, and agreed priority actions related to climate change.
2. Participate in the development of national climate change strategies, NDCs, NAPs, and climate change strategies in sectors relevant to forests, and promote the

inclusion of forests in these strategies, contributions and policies, as appropriate.

3. Adjust forest legislation and revise or establish regulations to ensure consistency with forest-related policies on climate change mitigation (e.g. REDD+[5]) and adaptation.

Concordance of broader development policies with forest policies

4. Promote the revision of legislation in other sectors to eliminate conflicts and enhance synergies with forest-related climate change policies and actions.

Institutional frameworks

5. Decide on the division of roles and responsibilities between governmental bodies and among other stakeholder organizations that are required to facilitate the effective implementation of forest-related climate change policies.
6. Establish clearly defined procedures for the resolution of forest-related conflicts arising from the impacts of climate change and response measures.

Financial incentives, economic instruments and benefit sharing

7. Revise existing incentives (e.g. loans, grants, taxes), or design new incentives, so that they are in line with forest-related climate change strategies and the goals expressed in NDCs.
8. Promote the elimination of perverse incentives in other sectors that work against the achievement of forest-related strategies and goals.
9. Design mechanisms to ensure that new sources of financing are tapped; that these resources are channelled in an equitable and transparent manner to targeted stakeholders through suitable means (e.g. micro-credit, project actions, insurance against extreme events, risk-sharing schemes); and that the distribution mechanisms for funding are coordinated and coherent.
10. Revise policies and introduce measures to encourage private sector investments in forest-related climate change actions.

Stakeholder participation

11. Involve stakeholders, including stakeholders from other key sectors, at the national and subnational levels in consultations and deliberations to assess needs, identify priority actions and develop strategies on forests and climate change.
12. Involve the bodies responsible for climate change and land use issues in discussions and decisions on possible improvements in mechanisms for coordination and collaboration on forest-relevant and climate change actions.
13. Adapt or establish effective and appropriate mechanisms for stakeholder involvement in implementing climate change-related revisions to national forest policy.

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[5] Key needs include equitable distribution of financial incentives, rights and responsibilities; rights of ownership and trade of forest carbon, and related land tenure issues; alignment of national laws/regulations with international obligations; and adherence to REDD+ safeguards.

Information, communication and research

14. Adjust national forest information systems (e.g. national forest inventories) to accommodate new forest monitoring, assessment and reporting needs, and identify indicators for monitoring the impacts of climate change and the effectiveness of adaptation and mitigation measures. Ensure coherence with international monitoring and measurement, reporting and verification requirements (including REDD+).
15. Develop a national communications strategy on forests, land use and climate change that: provides appropriate and timely information to all key stakeholders; informs stakeholders in other sectors; increases public awareness of the role of forests in climate change; and promotes the use of traditional knowledge to reduce vulnerabilities and enhance adaptation to climate change.
16. Agree on actions to adjust forestry research programmes and strategies so that they respond to the new requirements that have been identified, and encourage interdisciplinary problem-oriented approaches and international, regional, and national cooperation.

Stakeholder capacity and action

17. Amend capacity-development strategies to include issues related to forests, land use and climate change, and devise ways and means to provide capacity development to key stakeholders at all levels.

Cooperation and coordination

18. Contribute to the development of the country's positions on issues related to forest and climate change under debate in international conventions and agreements, such as the UNFCCC, the CBD, the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Forum on Forests (UNFF).

Implementation

Forest-related policies and laws

1. Implement forest policies related to climate change by amending and/or developing operational plans at the national and subnational levels.
2. Implement policies that facilitate decision-making at the local level to ensure rapid and locally appropriate adaptation responses, and the uptake of traditional coping strategies.
3. Enforce revisions of forest laws and regulations related to climate change.

Concordance of broader development policies with forest policies

4. Implement actions to reduce conflicts and develop synergies between other sectoral policies (e.g. agriculture, energy, mining, rural development, transport, poverty reduction) and climate change strategies or actions in the forest sector.

Institutional frameworks

5. Implement agreed upon changes in the organizational frameworks and the realignment of bodies in ways that are consistent with their new mandates and tasks related to forests and climate change.

Financial incentives, economic instruments and benefit sharing

6. Secure and apply a mix of public and private funds, as well as domestic and externally sourced climate and development funds (e.g. GCF, GEF, REDD+), to support forest-related adaptation and mitigation actions by different actors that are commensurate with the needs and capacities of these actors.
7. Implement changes in financing and incentives in the forest sector to support adaptation and mitigation investments, promote innovative approaches and enable the equitable and transparent distribution of resources. Work with other sectors to eliminate perverse financial incentives that undermine forest-related climate change responses.
8. Reinvest part of the revenues from forest-related climate change activities to strengthen forestry organizations, and financial and governance frameworks.

Stakeholder participation

9. Employ, and where necessary strengthen, conflict management mechanisms to resolve conflicts among stakeholders arising from the impacts of climate change or the responses to climate change in the forest sector.
10. Engage with stakeholder consultative mechanisms to enhance participatory decision-making and participation in the implementation of actions on forests and climate change, and adhere to the principle of Free, Prior and Informed Consent (FPIC).

Information, communication and research

11. Amend forest monitoring and reporting systems related to climate change mitigation and adaptation measures, including reporting requirements to UNFCCC and other international processes, as part of the country's overall forest monitoring and reporting system.
12. If the country is engaged in REDD+ activities, develop systems for addressing and reporting on social and environmental safeguards, and identify the country's reference emission level and/or reference level in a manner that is consistent with the decisions taken in the UNFCCC.
13. Implement a communications strategy and related programmes, which will involve developing communication channels with different stakeholder groups; summarizing and disseminating knowledge pertinent to forests and climate change (e.g. good practices, experiences and lessons learned) from sources within and

outside the country; engaging with stakeholder consultative mechanisms; and adhering to the principle of FPIC.

14. Strengthen research on forest, land use and climate change, and encourage research collaboration across sectors and with other countries.

Stakeholder capacity and action

15. Implement education and training programmes on forests, land use and climate change that are tailored to specific user groups at different levels within governmental bodies, the private sector, community-based organizations and indigenous groups.

Cooperation and coordination

16. Maintain close contact with regional and international forest-related bodies and processes, and engage, where appropriate, in policy-relevant initiatives on climate change.
17. Revise existing intra- and cross-departmental and sectoral mechanisms, or develop new mechanisms, to facilitate coordination between bodies at the national, subnational and local levels, and between public and private bodies.

Monitoring and evaluation

Forest-related policies and laws

1. Monitor emerging issues and decisions related to national and international climate change policy processes that are relevant to forests.
2. Monitor progress being made in the implementation of forest-related NDCs, NAPs and other strategies and actions related to climate change, and periodically evaluate their impact and the need for policy revisions.
3. Monitor progress being made in revising laws and regulations related to climate change and forests, including those that pertain to tenure, ownership and trading rights of forest carbon, and periodically evaluate the impact of these revisions.

Concordance of broader development policies with forest policies

4. Assess the success of efforts to eliminate perverse incentives or amend policies in other sectors that hinder the achievement of forest-related adaptation and mitigation objectives.

Institutional frameworks

5. Monitor the progress and periodically evaluate the implementation of revisions in organizational frameworks, and the related responsibilities and the respective alignment of bodies with new tasks and duties.

Financial incentives, economic instruments and benefit sharing

6. Monitor the emergence of new national and international sources of finance for forest-related climate change actions.
7. Monitor and periodically evaluate the allocations and funds spent on forest and climate change responses, particularly with regard to their effectiveness, efficiency, equity and accountability.

Stakeholder participation

8. Monitor and assess the degree of participation of stakeholder groups, the application of the principle of FPIC, and the use of conflict management mechanisms in forest and climate change decision-making.

Information, communication and research

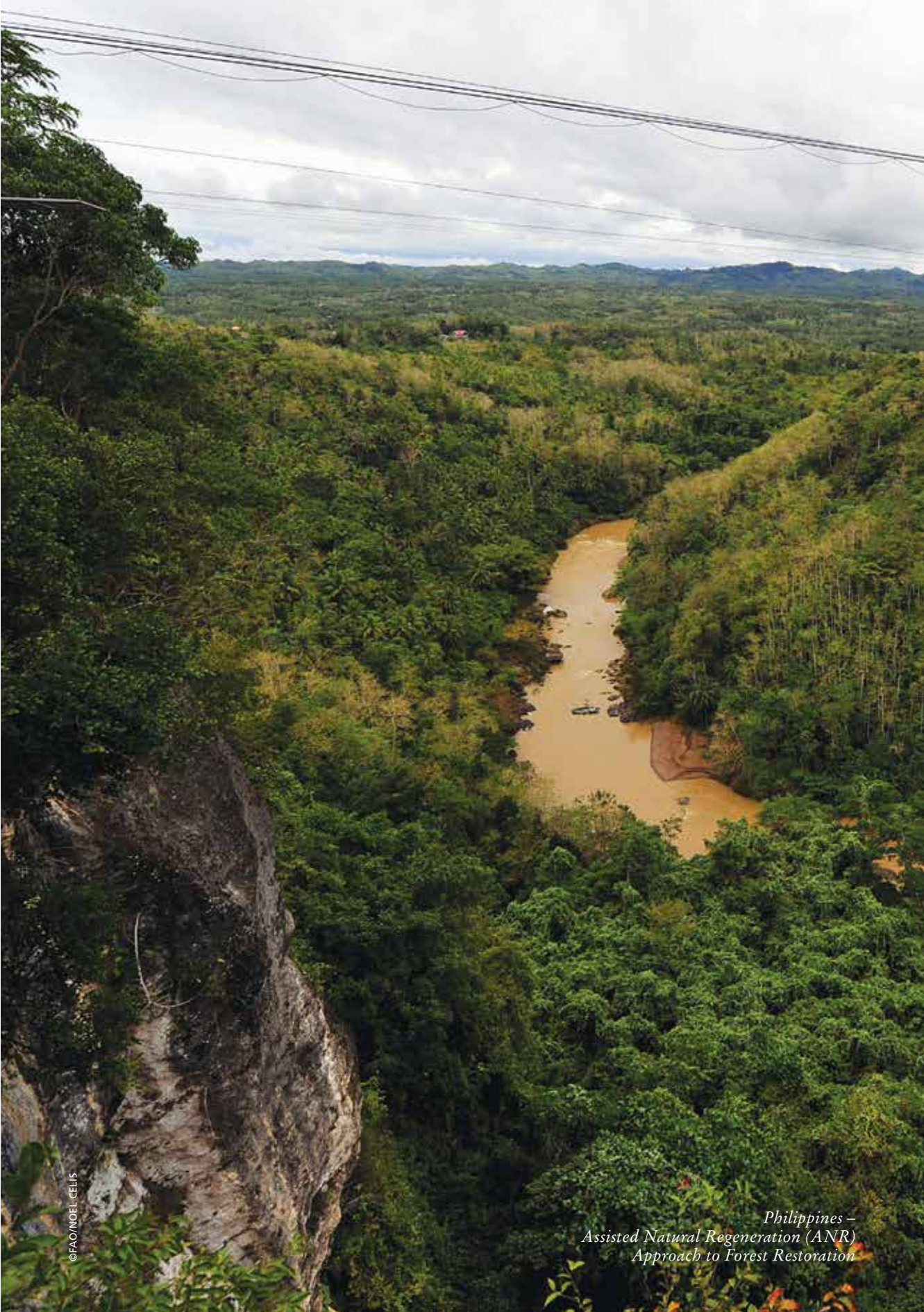
9. Monitor progress in data collection, assessment, reporting and verification related to forests and climate change.
10. Monitor and periodically evaluate the updating of information and communication messages on forests and climate change and their impact on all relevant stakeholders.
11. Monitor and assess the application of social and environmental safeguards for climate change adaptation and mitigation, particularly the safeguards for REDD+ if the country is participating in REDD+ programmes.
12. Periodically monitor and evaluate: forest research programmes for their relevance and contribution to climate change adaptation and mitigation programmes; the progress being made in strengthening regional, international and cross-sectoral research cooperation; and the dissemination and uptake of findings.

Stakeholder capacity and action

13. Periodically monitor progress in improving the level of climate change knowledge and expertise, both technical and managerial, in government forestry bodies at different levels, in research, training and education institutions, and in non-governmental organizations, community-based organizations and other stakeholder groups.

Cooperation and coordination

14. Periodically evaluate the degree and effectiveness of coordination across the organizational frameworks and sectors that are relevant to forests and climate change, in particular between bodies at the national, subnational and local levels, and between public and private bodies.
15. Monitor changes in international agreements on climate change and assess their implications for national forest laws and regulations.



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Philippines –
Assisted Natural Regeneration (ANR)
Approach to Forest Restoration

Democratic Republic of the Congo – Students from the University of Kasangani measuring and taking note of the diameter and length of the harvested rattan in the Yoko Forest

© [PHOTO CREDIT]

Section 4 – Tools and Information

One of the challenges of dealing with forests and climate change is coping with the rapid pace at which new information is produced. Another challenge is dealing with the sheer volume of information and material. This section provides lists of sources of basic information, case studies and useful tools. They are divided into categories that reflect the four stages of the policy process model.

Evidence and analysis

References

- **FAO State of the World's Forests (2018): Forest Pathways to Sustainable Development**
  The publication provides detailed analysis aimed at capturing the contribution of forests and trees to 28 targets relating to ten SDGs. Through thematic metrics bringing together available evidence from a wide range of sources, a clearer picture is emerging of the full impact that forests and trees have on many other crucial areas of development.
  http://www.fao.org/3/I9535EN/i9535en.pdf

- **FAO Climate-Smart Agriculture Sourcebook (2017)**
  This website summarizes the latest on climate-smart agriculture (CSA), which has become increasingly important in the new international landscape. The three interlinked objectives of CSA are: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing GHG emissions, where possible.
  http://www.fao.org/climate-smart-agriculture-sourcebook/en/

- **FAO Regional Analysis of the NDCs of Eastern Africa (2017)**
  This report provides guidance to FAO and other international organizations that are committed to providing developing countries with the support they need to implement their NDCs and ensure their future commitments are transparent, quantifiable, comparable, verifiable and ambitious.
  http://www.fao.org/3/a-i8079e.pdf (Executive Summary)
  http://www.fao.org/3/a-i8165e.pdf

- **Taking stock of the (I)NDCs of developing countries: regional (I)NDC coverage of mitigation sectors and measures (2017)**
  The publication offers an overview of the range of mitigation sectors, sub-sectors, and measures included in the (I)NDCs of developing countries. It also outlines and discusses the support developing countries need in order to implement these measures.
  http://www.unepdtu.org/-/media/Sites/Uneprisoe/Publications%20(Pdfs)/NDC-Analysis-2017.ashx?la=da

- **Forest Disturbances under Climate Change (2017)**
  This study analyses more than 600 research papers from the last 30 years and reviews the possible climate impacts on forests disturbances. Results show that increasing risks for forests are to be expected in the future.
  https://www.nature.com/articles/nclimate3303

- **REDD+ in Africa: Contexts and Challenges (2017)**
  This review analyses particular features and challenges that REDD+ implementation has faced on the African continent. The publication also looks at the distinct contexts and major challenges regarding governance, finance and technical capacities in Africa, and suggests mechanisms to fill these gaps.
  http://www.asb.cgiar.org/publication/redd-africa-contexts-and-challenges

- **Incentives and Disincentives for Reducing Emissions under REDD+ in Indonesia (2017)**
  This document, which is a chapter from the publication, *Pathways to a Sustainable Economy*, explores the fiscal incentives and disincentives that contribute, either positively or negatively, to reducing emissions from deforestation and forest degradation in Indonesia. One of its findings is that there is a need for improved financial governance in future fiscal policy reform.
  https://link.springer.com/chapter/10.1007/978-3-319-67702-6_11

- **Gender and REDD+ (2017)**
  This report examines the hurdles, including a lack of rights regarding forest use and land tenure, that marginalized groups, especially women, continue to face and that prevent them from equitably accessing and receiving REDD+ benefits. For the global REDD+ effort to succeed, it has to deliver co-benefits in the form of sustainable development, poverty reduction and gender equality.
  http://www.undp.org/content/undp/en/home/librarypage/womens-empowerment/gender-and-REDD.html

- **The Agriculture Sectors in the Intended Nationally Determined Contributions: Analysis (2016)**
  This report offers a granular picture of priority adaptation and mitigation areas,

actions and support needs. As the international community shifts its attention to the implementation of the Paris Agreement, all climate action will be guided by countries' nationally determined contributions (NDCs) and relevant national policy frameworks.
http://www.fao.org/3/a-i5687e.pdf

- **The Geography of REDD+ Finance – Deforestation, Emissions, and the Targeting of Forest Conservation Finance (2016)**
  This report provides a comprehensive analysis of the 'geography' of REDD+ funding. It notes that the nearly USD 6 billion that has been pledged to forest conservation in ten key countries under REDD+ has been successfully directed to nations with high levels of deforestation and associated carbon emissions.
  http://forest-trends.org/releases/p/geography_redd_finance

- **FAO State of the World's Forests (2016)**
  This report explores the challenges and opportunities involved when addressing the complex interrelationships between forests, agriculture and sustainable development. It demonstrates that the sustainable management of both forests and agriculture, and their integration in land-use plans, is essential for achieving the SDGs, ensuring food security and tackling climate change.
  http://www.fao.org/publications/sofo/en/

- **Forests and Sustainable Forest Management – Evaluation Evidence on Addressing Deforestation to Reduce CO_2 Emissions (2016)**
  This paper highlights common findings from recent evaluations of interventions in the forest sector. Topics it addresses include: synergies and trade-offs between climate change objectives and other goals; the need for co-ordination, alignment and leadership from partners and donors; local ownership and inclusive engagement of stakeholders; and specific findings on common programmatic approaches.
  https://www.oecd.org/dac/evaluation/Evaluation-Insights-Forests-Final.pdf

- **Forests and Climate Change after Paris – An Asia-Pacific Perspective (2016)**
  This publication is the outcome of the seventh of the expert consultations on forests and climate change organized by FAO and the Center for People and Forests (RECOFTC). Since 2010, these annual consultations have assessed the outcomes of the UNFCCC COPs and their potential implications for Asia and the Pacific.
  http://www.unredd.net/documents/un-redd-partner-countries-181/asia-the-pacific-333/a-p-knowledge-management-a-resources/regional-events/asia-pacific-un-redd-regional-exchange-event-on-redd-financing-september-2015/supporting-documents/15502-info-product-forests-and-climate-change-after-paris.html

- **Synthesis Report on Experiences with Ecosystem-Based Approaches to Climate Change Adaptation and Disaster Risk Reduction (2016)**
  This report is a review and synthesis of global experiences on ecosystem-based approaches to climate change adaptation and disaster risk reduction.
  https://www.cbd.int/doc/publications/cbd-ts-85-en.pdf

- **The Evolution of Forest Finance in Five African Countries – Lessons Learned from the REDDX Initiative in Africa (2016)**
  This study builds on the initial five years of the work of Forest Trends' REDDX initiative to synthesize the main trends and understand the lessons learned in Africa with respect to REDD+ finance and readiness, and the implementation of REDDX.
  http://www.forest-trends.org/publication_details.php?publicationID=5420

- **What Are We Talking About? The State of Perceptions and Knowledge on REDD+ and Adaptation to Climate Change in Central Africa (2015)**
  This study was carried out by the Center for International Forestry Research (CIFOR) to gain a better picture of how people with professional interest in adaptation and REDD+ in Central Africa understand the key concepts of climate change.
  http://www.cifor.org/library/5087/what-are-we-talking-about-the-state-of-perceptions-and-knowledge-on-redd-and-adaptation-to-climate-change-in-central-africa/

- **FAO Global Forest Resources Assessments – How are the World's Forests Changing? (2015)**
  The Global Forest Resources Assessments (FRA), which are published every five years, provide a consistent approach to describing the world's forests and how they are changing. The assessments are based on two primary sources of data: country reports prepared by national correspondents and remote sensing that is conducted by FAO in collaboration with national focal points and regional partners.
  http://www.fao.org/forest-resources-assessment/en/

- **Synergies between Climate Mitigation and Adaptation in Forest Landscape Restoration (2015)**
  This study examines the current discourse and practice on climate change mitigation and adaptation in forest landscape restoration (FLR), and analyses their implications to gain a better understanding of the complementarities and synergies between mitigation and adaptation, specifically in the context of FLR.
  https://www.iucn.org/content/synergies-between-climate-mitigation-and-adaptation-forest-landscape-restoration

- **Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report: Climate Change (2014)**
  This report summarizes the findings of the three working group reports and provides a synthesis that specifically addresses issues of concern to policy-makers. Key conclusions from the assessment include: adaptation and mitigation are complementary strategies for reducing and managing the risks of climate change; substantial emissions reductions over the next few decades can reduce climate risks in the 21st century and beyond, increase prospects for effective adaptation, reduce the costs and challenges of mitigation in the longer term, and contribute to climate-resilient pathways for sustainable development; and effective implementation depends on policies and cooperation at all scales, and can be enhanced through integrated responses that link adaptation and mitigation with other societal objectives.
  http://ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1

- **REDD+, Biodiversity and People: Opportunities and Risks (2012)**
  This policy brief summarizes the key messages of the International Union of Forest Research Organizations (IUFRO) report, *Understanding Relationships between Biodiversity, Carbon, Forests and People: The Key to Achieving REDD+ Objectives*. The report evaluates the implications of forest and land management interventions envisaged under REDD+ in a multidimensional and integrated fashion.
  https://www.iufro.org/science/gfep/biodiv-forman-redd-panel/report/

- **REDD+-plus and Biodiversity (2011)**
  This document provides technical and scientific information for designing and implementing REDD+ in a way that supports the implementation of the CBD work programme on forest biodiversity.
  https://www.cbd.int/doc/publications/cbd-ts-59-en.pdf

- **Forest Resilience, Biodiversity, and Climate Change (2009)**
  This publication explores the links between biodiversity, forest ecosystem resilience and climate change. It provides a compelling rationale for the conservation and sustainable use of biodiversity in all forest-based climate change mitigation and adaptation efforts. Its findings are relevant to the future implementation of the CBD, UNFCCC, UNFF, and other international and regional forest-related agreements.
  https://www.cbd.int/doc/publications/cbd-ts-43-en.pdf

- **Adaptation of Forests and People to Climate Change – A Global Assessment Report (2009)**
  The report (IUFRO World Series 22) constitutes a comprehensive assessment of scientific information about the impacts of climate change and how forests and

people can adapt to them.
http://www.iufro.org/science/gfep/adaptaion-panel/the-report/download-by-chapter/

Tools

- **World Bank Climate Change Knowledge Portal (2018)**
  This portal The Climate Change Knowledge Portal provides a central hub of information, data and reports about climate change from around the world. Development practitioners and policy-makers can query, map, compare, chart and summarize key climate and climate-related information.
  http://sdwebx.worldbank.org/climateportal/

- **weADAPT Collaborative Platform on Climate Adaptation Issues (2018)**
  weADAPT is an online 'open space' on climate adaptation issues, including the synergies between adaptation and mitigation. It gives policy-makers access to credible, high-quality information and allows them to share experience and lessons learnt. The platform, which builds on expertise from the Stockholm Environment Institute (SEI), offers policy-relevant tools and guidance for adaptation planning and decision-making.
  www.weadapt.org

- **UNEP Climate Initiatives Platform (2018)**
  This platform is an online portal for collecting, sharing and tracking information on international cooperative climate initiatives that are driven by non-state actors, such as businesses and cities, often with support from national states. The current collection consists of over 200 initiatives.
  http://climateinitiativesplatform.org/index.php/Welcome

- **Community-Based Resilience Analysis (CoBRA) Implementation Guidelines: V2 (2017)**
  CoBRA is a tool for understanding resilience from a community and household perspective. It is based on the premise that the building blocks of resilience vary from location to location. Using participatory methods, CoBRA strives to help local populations that are affected by different shocks and stresses.
  http://www.undp.org/content/undp/en/home/librarypage/environment-energy/sustainable_land_management/CoBRA/cobra_guide.html

- **Estimating Smallholder Opportunity Costs of REDD+: A Pantropical Analysis from Households to Carbon and Back (2017)**
  This analysis estimates smallholder opportunity costs of REDD+ in 17 sites in six countries across the tropics. Households facing restrictions on forest-based activities must be compensated. However, evidence is limited regarding

the actual costs to households, their distribution, and their implications for efficiency and equity.
https://www.cifor.org/library/6416/estimating-smallholder-opportunity-costs-of-redd-a-pantropical-analysis-from-households-to-carbon-and-back/

- **Climate-Smart Landscapes: Multi-functionality in Practice (2015)**
  The book looks at the 'landscape approach' to achieving multiple climate, social, development and environmental objectives. It focuses on climate-smart landscapes as a growing platform and pathway towards achieving multifunctionality in the context of climate change.
  http://www.worldagroforestry.org/output/climate-smart-landscapes-multifunctionality-practice

Planning process

References

- **UNCCD Global Land Outlook (2017)**
  This first edition of the Global Land Outlook emphasizes the fact that informed and responsible decision-making and simple changes in our everyday lives can, if widely adopted, help to reverse the current negative trends in the state of land resources.
  http://www2.unccd.int/publications/global-land-outlook

- **A Financial Strategy for the Production-Protection Compact in the Peruvian Amazon (2017)**
  This paper diagnoses the current financial needs and opportunities to support the Production-Protection Compact, which is part of Peru's broader goals, which are laid out in its NDCs and its national strategy for forests and climate change.
  https://earthinnovation.org/publications/a-financial-strategy-for-the-production-protection-compact-in-the-peruvian-amazon/

- **Mapping Financial Flows for REDD+ and Land Use in Brazil (2017)**
  This report presents the mapping results of national and international REDD+ financial flows to Brazil from 2009 through 2016. It contains detailed analyses of new sources of finance flows that may impact REDD+ goals, including financial commitments to promote low-carbon agriculture and subnational case studies of the states of Amazonas and Acre.
  https://www.forest-trends.org/publications/mapping-financial-flows-redd-land-use-brazil

- **How the EU Governance Regulation Can Help Achieve Negative Emissions (2017)**
  This briefing states that there is effectively only one realistic and sustainable way to remove large amounts of carbon dioxide from the atmosphere: forests. With much of Europe's land already taken up by agriculture and urban areas, meeting the Paris targets will require the restoration of Europe's existing forests, many of which have become degraded from over-harvesting. Restoring these degraded forests could provide most of the negative emissions Europe needs to meet its targets.
  http://fern.org/publications/briefing-note/how-eu-governance-regulation-can-help-achieve-negative-emissions

- **How to Achieve the Sustainable Development Goals? Focus on Forests (2016)**
  This leaflet explains why the SDGs cannot be met without changes to EU forest policy. Protecting forests and the communities that defend them involves a number of issues, including poverty eradication, food security, climate change, social justice and sustainable consumption and production patterns. Any EU response to the SDGs must contribute to the protection of forests and the recognition and promotion of the rights of those who live in them.
  http://fern.org/focusonforests

- **The Implications of the Paris Climate Agreement for Private Sector Roles in REDD+ (2016)**
  This analysis indicates that in addition to opportunities for the private sector to dramatically increase funding levels for forest protection, business leadership can also better align corporate and government policies to achieve the goals of the Paris Agreement. To facilitate that leadership, it is critical that national governments create a broad range of policies and incentives that spur the private sector to act, either voluntarily or in compliance with domestic law.
  http://www.forest-trends.org/releases/p/private_sector_redd

- **Integrating mitigation and adaptation in climate and land use policies in Brazil: a policy document analysis (2016)**
  This paper investigates climate policy integration and coherence in land-use policies in Brazil. Unlike other policy analyses, one of its key aims is to assess 'internal policy coherence' in the climate change domain and the extent to which positive and negative interactions between mitigation and adaptation are taken into account in policy formulation.
  http://www.cifor.org/library/5997/integrating-mitigation-and-adaptation-in-climate-and-land-use-policies-in-brazil-a-policy-document-analysis/

- **A Climate Resilient, Zero-Carbon Future: UNDP's Vision for Sustainable Development through the Paris Agreement (2016)**
  This paper outlines the United Nations Development Programme's (UNDP) vision for taking a zero-carbon path and deliver climate-resilient sustainable development. A key objective is the strengthening of the capacities of developing countries.
  http://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/Climatecommittment.html

- **Scaling Up Climate Action to achieve the SDGs (2016)**
  This report focuses on the linkages between climate change and sustainable development. The report highlights the importance of climate action for reaching the targets set out in the SDGs and provides examples from the field of UNDP's ongoing work in this area.
  http://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/scaling-up-climate-action-to-achieve-the-sdgs.html

- **The Paris Agreement (2015)**
  This report summarizes the outcomes of the Paris Agreement. For the first time, the Paris Agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so.
  http://unfccc.int/paris_agreement/items/9485.php

- **Warsaw Framework for REDD+ (2013)**
  This factsheet provides an overview of the seven decisions of the Warsaw Framework for REDD+ adopted at the COP 19 of the UNFCCC in 2013. The Warsaw Framework provides clarity on a number of important issues related to REDD+ implementation.
  http://redd.unfccc.int/fact-sheets/warsaw-framework-for-redd.html

- **Guidelines on Stakeholder Engagement in REDD+ Readiness (2011)**
  These Guidelines, developed jointly by The UN-REDD Programme and the Forest Carbon Partnership Facility (FCPF), incorporate all the substantive guidance from the UN-REDD Programme document *Operational Guidance: Engagement of Indigenous Peoples and Other Forest Dependent Communities* and the FCPF's *Guidance Note on National Consultation and Participation for REDD*.
  http://www.unredd.net/index.php?option=com_docman&task=cat_view&gid=1120&Itemid=53

- **Reforming Forest Tenure Issues, Principles and Process (2011)**
  This FAO publication provides practical guidance for people who are involved in forest policy reforms associated with tenure or considering the effectiveness of existing tenure systems.
  http://www.fao.org/docrep/014/i2185e/i2185e00.pdf

- **Developing Effective Forest Policy (2010)**
  This FAO publication, targeted to government officials and civil society organizations, supports countries in their efforts to plan or revise national forest policy. Based on a review of practical experiences, it outlines the purpose and goals of a national forest policy and provides recommendations for an effective policy development process.
  http://www.fao.org/docrep/013/i1679e/i1679e00.htm (booklet)
  http://www.fao.org/docrep/013/am007e/am007e00.pdf

- **Forest Governance and Climate Change Mitigation (2009)**
  In this brief, FAO and the International Tropical Timber Organization (ITTO) highlight the lessons learned from experiences on the ground and set out the key elements for an approach to forest law compliance and governance that can ensure that the role forests play in mitigating climate change is optimized.
  http://www.fao.org/forestry/19488-1-0.pdf

Tools

- **Benefits and Risks Tool (BeRT) v2.1: Workshop Kit. Facilitators' Guide (2017)**
  This UN-REDD tool supports REDD+ countries in assessing the social and environmental benefits and risks associated with candidate Policies and Measures (PAMs), and analyses how existing policies, laws and regulations (PLRs) can ensure that the REDD+ safeguards are addressed and respected.
  http://www.unredd.net/documents/global-programme-191/safeguards-multiple-benefits-297/safeguards-coordination-group-2606/bert-3525/un-redd-programme-bert-english-3599/16087-benefits-and-risks-tool-bert-v21-workshop-kit-facilitators-guide.html

- **Adapting to Climate Change - Guidance for Protected Areas Managers and Planners (2016)**
  These guidelines are primarily focused on actions and strategies that help species and ecosystems adapt so that the core values and functions of protected areas can be maintained under climate change.
  https://portals.iucn.org/library/sites/library/files/documents/PAG-024.pdf

- **UN-REDD Argentina Course on Climate Change and Forests toward the Construction of the National REDD+ Strategy (2016)**
  This course (in Spanish) deals with the construction of a national REDD+ strategy in Argentina. It touches on several important themes, such as the multiple benefits of REDD+, safeguards and capacity-building resources.
  http://www.unredd.net/documents/global-programme-191/multiple-benefits/workshops-and-events-1/un-redd-argentina-course-on-climate-change-and-forests-toward-the-construction-o.html

- **FAO Capacity Development Learning Modules (2015)**
  The four FAO modules for capacity development provide learning materials that can be used at the country level. Modules provide concrete information on implementing the new FAO approach to capacity development and contain many tools for practitioners.
  http://www.fao.org/capacity-development/resources/fao-learning-material/learning-modules/en/

- **Community-based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL) (2013)**
  CRiSTAL is a project-planning tool that helps project planners and managers integrate climate change adaptation and risk reduction into community-level projects. CRiSTAL features a version dedicated to forests, which focuses on livelihoods that depend on forest ecosystem services.
  http://www.iisd.org/cristaltool/

Implementation

References

- **Collaboration Toward Zero Deforestation - Aligning Corporate and National Commitments in Brazil and Indonesia (2017)**
  In this report, Environmental Defense Fund and Forest Trends examine case studies on corporate commitments, government policies, and multi-stakeholder initiatives that support NDCs in Brazil and Indonesia. The report analyses how current initiatives align with NDCs, and identifies ways to improve this alignment.
  http://www.forest-trends.org/publication_details.php?publicationID=5439

- **Finance for Forests – Progress on the New York Declaration on Forests (2017)**
  This report draws on, consolidates, and interprets data from various think tanks and research organizations engaged in tracking finance related to forests, reducing emissions from deforestation and forest degradation, and the sectors driving deforestation.
  http://forestdeclaration.org/

- **Listening to our Land - Stories of Resilience (2017)**
  This publication tells stories of people's work on the land. It describes their relationship with their land and their efforts to improve its quality through SLM practices. The book highlights the impacts of SLM projects that have been supported by UNDP and funded by the GEF in eight selected countries.
  http://www.undp.org/content/undp/en/home/librarypage/environment-energy/ecosystems_and_biodiversity/listening-to-our-land---stories-of-resilience.html

- **The Adaptation Fund and the Paris Agreement (2016)**
  This brief clarifies the role of the Adaptation Fund in the context of the Paris Agreement and addresses the following questions: What contribution can the Adaptation Fund make to the Paris Agreement? How can adaptation financing be scaled up to implement the Paris Agreement?
  https://www.adaptation-fund.org/wp-content/uploads/2016/11/Adaptation-Fund-and-Paris-Agreement.pdf

- **Catalyzing Climate-Smart Land Use for a Sustainable Future (2016)**
  This paper proposes various approaches for strengthening coalitions and mobilizing action to scale up climate-smart land use. The Paris Agreement goals cannot be met without significant emission reductions from land use in the agriculture (crop and livestock production) sector, deforestation and forest degradation.
  http://www.thegef.org/publications/catalyzing-climate-smart-land-use-sustainable-future

- **Collaboration Toward Zero Deforestation (2017)**
  This report examines case studies on corporate commitments, government policies, and multi-stakeholder initiatives that support Nationally Determined Contributions (NDCs) in Brazil and Indonesia. It concludes with specific recommendations to enhance collaboration on private sector commitments and NDCs in both countries, and also presents relevant findings that could apply in other countries and contexts.
  http://forest-trends.org/releases/p/collaboration-toward-zero-deforestation

- **African Solutions in a Rapidly Changing World: Nature-Based Solutions to Climate Change by African Innovators in Protected Areas (2015)**
  This volume of case studies from Africa presents clear evidence that there are many effective, nature-based approaches being employed in and through protected areas to deal with the day-to-day reality of changing environments and climates and all the complex interactions this involves. A suite of solutions and building blocks for successful approaches can be drawn out, which can then be more widely shared and applied.
  https://portals.iucn.org/library/node/45769

- **GEF's Private sector Engagement in Climate Finance - Climate Funds Update (2014)**
  This paper assesses the role that the private sector should play in the fight against climate change. Together with its dedicated climate adaptation funds, the GEF will work to accelerate climate finance during the next four years.
  http://www.thegef.org/publications/gefs-private-sector-engagement-climate-finance

- **Framework for Assessing and Monitoring Forest Governance (2011)**
  The FAO/PROFOR framework can serve as a starting point for understanding forest governance. It provides basic scaffolding upon which additional dimensions, layers of nuance and depths of detail may be added to suit the aims of different users. It can be used in whole or in part, depending on the purpose and the intended audiences for the results. The framework also can be simplified by focusing on certain pillars and components and disregarding others.
  http://www.fao.org/climatechange/27526-0cc61ecc084048c7a9425f64942df70a8.pdf

Tools

- **FAO Sustainable Forest Management Toolbox (2018)**
  The SFM toolbox collates a large number of tools, case studies and other resources, and presents the materials in the form of modules. It has been created to provide forest owners, managers and other stakeholders with easy access to important resources for SFM implementation.
  http://www.fao.org/sustainable-forest-management/toolbox/en/

- **Climate Funds Update (2018)**
  This is an independent website that provides information on the growing number of international funding initiatives designed to help developing countries address the challenges of climate change.
  http://www.climatefundsupdate.org

- **UNDP/World Bank Platform on Climate Finance Options (2018)**
  This platform provides comprehensive guidance on the financial options available for climate action in developing countries. It contains information on where to access the wide range of funds available from multilateral and bilateral institutions, and from public and private sources. It also includes information about the governance of the funds and the eligibility criteria for projects.
  http://www.unsystem.org/content/climate-finance-options-cfo-platform

- **Guide to the Green Climate Fund – GCF 101 (2017)**
  This guide is a comprehensive road map for anybody who would like to access the financial resources of the GCF. Each section of GCF 101 addresses the different funding opportunities available to help developing countries cope with climate change. Each section is broken down into three parts: a short overview of GCF funding activities; a step-by-step guide on how to apply for funding; and a series of frequently asked questions.
  http://www.greenclimate.fund/gcf101

- **Restoration Opportunities Optimisation Tool (ROOT) (2017)**
  ROOT is a tool to perform optimization and trade-off analyses, and make informed decisions on ecosystem services. It combines information about the potential impacts of restoration or management change activities with spatial prioritization or service-shed maps to identify key areas for the provision of ecosystem service.
  https://www.iucn.org/news/forests/201709/taking-root-launch-new-restoration-tool

- **UNFCCC Adaptation Knowledge Portal (2018)**
  This portal, which provides information on the knowledge resources created under the Nairobi work programme, supports the implementation of climate change adaptation actions and the enhancement of resilience worldwide.
  http://www4.unfccc.int/sites/nwp/Pages/Home.aspx

- **What Do You Need to Consider when Thinking about Policies for Sharing Benefits from REDD+? (2016)**
  The REDD+ Benefit Sharing Knowledge Tree is designed to help users navigate the complexity of sharing benefits from the REDD+ mechanism. This tool builds on CIFOR's Global Comparative Study on REDD+.
  https://www.cifor.org/knowledge-tree/

- **OECD Climate Fund Inventory Database (2015)**
  The Climate Fund Inventory (CFI) is a qualitative database of bilateral and multilateral public climate funds. This CFI initiative is a response to the proliferation of climate funds that have been established to support countries with their climate change mitigation and adaptation actions. It supports recipient countries (e.g. least developed countries) by providing consolidated information on the number and types of available climate funds, and the climate funds countries may be eligible for and/or best suited to access.
  http://www.oecd.org/environment/cc/database-climate-fund-inventory.htm

- **OECD Toolkit to Enhance Access to Adaptation Finance (2015)**
  The Toolkit provides practical guidance for developing countries in identifying and accessing international climate finance. It includes tools for capacity development, project preparation and the effective use of the NAP process.
  http://www.oecd.org/environment/cc/Toolkit%20to%20Enhance%20Access%20to%20Adaptation%20Finance.pdf

Monitoring and evaluation

References

- **The Work of FAO to Enhance National Capacities to Report on Climate Change (AFOLU) – Agriculture, Forestry, and other Land Use (2017)**
  This infographic booklet describes what FAO provides to its member countries regarding the MRV framework. It also presents examples of experiences on the ground from Africa, Asia and Latin America and the Caribbean, and highlights useful resources.
  http://www.unredd.net/documents/un-redd-partner-countries-181/africa-335/2017-africa-knowledge-exchange/16272-the-work-of-fao-to-enhance-national-capacities-to-report-on-climate-change-afolu.html

- **Tracking adaptation in agricultural sectors: Climate change adaptation indicators (2017)**
  This paper outlines a framework and methodology for Tracking Adaptation in Agricultural Sectors (TAAS) at the national level. The framework recognizes the complex nature of adaptation processes across agricultural subsectors. It provides a clear understanding of the interrelationships between natural resources and ecosystems, agricultural production systems, socio-economics and institutional and policy systems that drive adaptation processes and outcomes.
  http://www.fao.org/3/a-i8145e.pdf

- **Participatory Planning, Monitoring and Evaluation of Multi-Stakeholder Platforms in Integrated Landscape Initiatives (2017)**
  This article proposes a participatory method to support the planning, monitoring, and evaluation of multi-stakeholder platforms. It provides reports on the experiences that have been gained from piloting the method in Ghana and Indonesia. Integrated landscape initiatives typically aim to strengthen landscape governance by developing and facilitating multi-stakeholder platforms. These are institutional coordination mechanisms that enable discussions, negotiations, and joint planning among stakeholders from various sectors in a given landscape.
  https://ecoagriculture.org/publication/participatory-planning-monitoring-and-evaluation-of-multi-stakeholder-platforms-in-integrated-landscape-initiatives/

- **A Sourcebook of Methods and Procedures for Monitoring Measuring and Reporting (2016)**
  This updated version of the Global Observation for Forest Cover and Land Dynamics (GOFC-GOLD) REDD sourcebook provides additional explanation, clarification, and methodologies to support REDD early actions and readiness mechanisms for building national REDD monitoring systems. The Sourcebook emphasizes the role of satellite remote sensing as an important tool for monitoring changes in forest cover. It also provides clarification on the IPCC Guidelines for reporting changes in forest carbon stocks at the national level.
  http://www.gofcgold.wur.nl/redd/index.php

- **FAO National Forest Monitoring and Assessment: Manual for Integrated Field Data Collection (2009)**
  This manual for integrated field data collection constitutes the basis for the development of a specific methodology for each country. It serves as the template and reference document for forest monitoring.
  http://www.fao.org/forestry/19900-026212d9ecb093f72c140429df893aea7.pdf

Tools

- **Global Forest Watch (2018)**
  Global Forest Watch offers data, technology and tools that can empower people to better protect forests. It includes over 100 global and local data sets that allow users to gain a better understanding about conservation, land use, forest communities, and new deforestation. Global Forest Watch Climate specifically addresses timely questions about carbon emissions from tropical deforestation.
  https://www.globalforestwatch.org/

- **REDD+ Web Platform (2018)**
  This web platform provides information submitted by UNFCCC Parties, relevant organizations and stakeholders in the following areas: technical assistance; demonstration activities; country-specific information; and methodologies and tools. The platform also features an interactive REDD+ discussion forum for sharing information, experiences and lessons learned on the use of the IPCC guidance and guidelines. It also contains submissions of forest reference emission levels and/or forest reference levels by developing country Parties.
  http://redd.unfccc.int/

- **Using Spatial Analysis to Explore Multiple Benefits from REDD+ Actions in Cross River State, Nigeria (2017)**
  This study uses spatial analysis to explore the potential for promoting multiple benefits from selected REDD+ actions in Cross River State, Nigeria. It also

looks at other REDD+ related planning factors, such as changes in forest and land cover and the particular pressures on forests.
http://www.unredd.net/documents/global-programme-191/multiple-benefits/studies-reports-and-publications-1364/15979-using-spatial-analysis-to-explore-multiple-benefits-from-redd-actions-in-cross-river-state-nigeria-low-resolution.html

- **Case Studies on Measuring and Assessing Forest Degradation (2009)**
  This FAO publication presents promising methodologies and tools for assessing different aspects of forest degradation from the point of view of the seven thematic elements of SFM. It identifies suitable indicators to assess the degree of degradation of a forest at different management scales.
  http://www.fao.org/docrep/012/k8592e/k8592e00.pdf

Back Kan, Viet Nam –
A farmer carrying acacia tree seedlings to the forest for planting as part of an afforestion effort

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Senegal –
Men and women from the community work in the trees nursery created in the village as part of the Great Green Wall Initiative

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FAO FORESTRY PAPER

Climate change for forest policy-makers

An approach for integrating climate change into national forest policy in support of sustainable forest management

Version 2.0

The critical role of forests in climate change mitigation and adaptation is now widely recognized. Forests contribute significantly to climate change mitigation through their carbon sink and carbon storage functions. They play an essential role in reducing vulnerabilities and enhancing adaptation of people and ecosystems to climate change and climate variability, the negative impacts of which are becoming increasingly evident in many parts of the world.

In many countries climate change issues have not been fully addressed in national forest policies, forestry mitigation and adaptation needs at national level have not been thoroughly considered in national climate change strategies, and cross-sectoral dimensions of climate change impacts and response measures have not been fully appreciated. This publication seeks to provide a practical approach to the process of integrating climate change into national forest programmes. The aim is to assist senior officials in government administrations and the representatives of other stakeholders, including civil society organizations and the private sector, prepare the forest sector for the challenges and opportunities posed by climate change.

This document complements a set of guidelines prepared by FAO in 2013 to support forest managers incorporate climate change considerations into forest management plans and practices.

ISBN 978-92-5-131094-6 ISSN 0258-6150

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CA2309EN/1/11.18